

# *ExplorNet's Digital Media II*



Objective 205.02 5%  
Select and utilize tools for digital audio production.

# Microphones

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- There are different types of microphones that have particular characteristics and produce different results.
  - Condenser
  - Dynamic
  - Lavalier
  - Shotgun

# Condenser Microphone

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- Requires an outside power source (phantom power).
- Results in a high quality signal production.
- Commonly used to capture a person's voice or a musical instrument in a studio.



# Dynamic Microphone

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- Does not require an outside power source.
- Audio signal strengthened by an audio board or other amplifier.
- Commonly used to capture audio during live production.
- Durable microphone.



# Lavalier Microphone

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- Typically attached to the necktie or shirt of the user.
- Used by performers on television or stage because their small size makes it easy to hide.
- Produce a relatively good sound quality.



# Shotgun Microphone

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- Usually long and skinny in appearance.
- Best for recording from a distance.
- Commonly found on high-end video cameras for capturing sound from the recording.
- Also referred to as a “boom” microphone.



# Audio Cables

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- Certain cable types are needed to connect all of the equipment correctly.
- USB Cables
- XLR Cables
- Mini Cables
- ¼" (Phono) Cables



## USB Cables

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- An advantage to USB (3.0, 2.0, and 1.1) is that there are many interfaces designed to run on USB bus power (rather than an external power supply).
- Works well for mobile recording with your laptop.

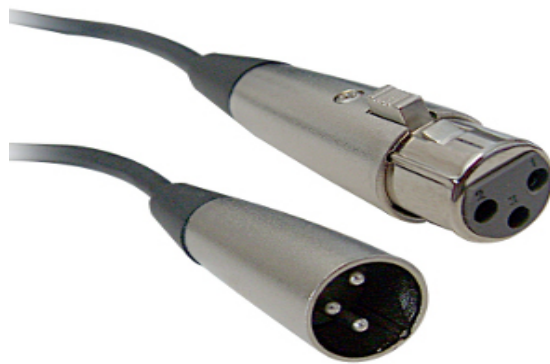




## XLR Cables

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- The best audio quality, making it common in the professional industry.
- Has a push-button locking system that keeps it from easily being unplugged.
- Very commonly used for microphones.



## Mini Cables

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- Found on virtually every consumer audio device.
- Relatively poor audio quality.
- Number of rings around the plug indicate if cable is mono (one ring) or stereo (two rings).



## 1/4" (Phonos) Cables

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- Widely used to connect speakers, amplifiers, and guitars.
- Similar to mini plug with the rings indicating the number of channels.
- Better audio quality when compared to the mini.



# Microphone Pickup Patterns

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- Depending on the type of recording that is desired and the location of the performers, different microphone pickup patterns record the sound in varying methods.

# Microphone Pickup Patterns

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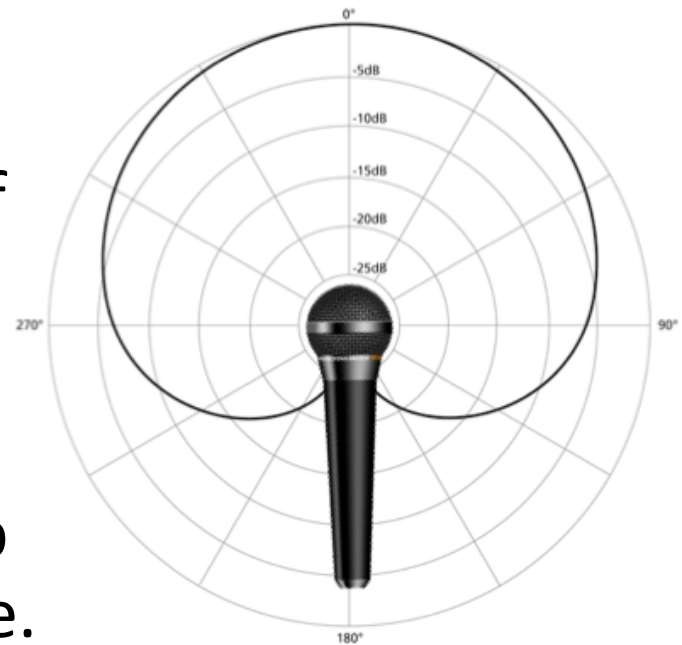
- Omnidirectional Pickup Pattern
  - Captures sound from all directions.
  - Useful for capturing sound from all parts of a room.
  - Commonly found on consumer video cameras.



# Microphone Pickup Patterns

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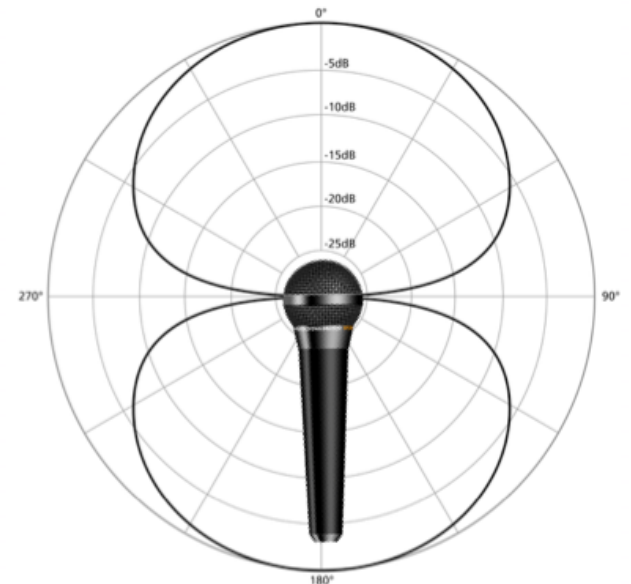
- Cardioid Pickup Pattern
  - Heart-shaped.
  - Audio sources in the front of the microphone and very close to the sides are captured.
  - Very little sound is picked up from behind the microphone.



# Microphone Pickup Patterns

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- ❑ Bi-Directional Pickup Pattern
  - ❑ Captures sound from in front of the microphone and behind it.
  - ❑ Very little sound is picked up from the sides.
  - ❑ Good microphone to use when recording a two-person conversation.

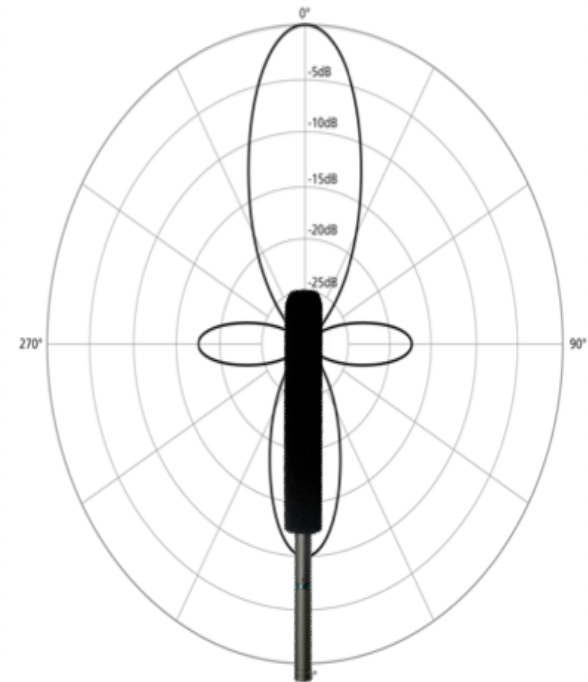




# Microphone Pickup Patterns

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- ❑ Shotgun Pickup Pattern
  - ❑ Captures sound from a pointed direction in a narrow range.
  - ❑ Useful for recording sound from long distances away (during video shoots, in stadiums, recording wildlife, etc.).
  - ❑ Very little sound is picked up from the sides or behind the microphone.



## Setup Microphone & Cables

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- Setup the microphone and use the appropriate cables to connect to a recording device
- Monitor the levels of the audio while the recording is taking place.
  - Watch the V.U. meter to make sure the audio is at the appropriate level throughout the entire recording.
  - Adjust the volume of the recording to keep the signal from clipping (producing a signal that is too loud for the amplifier to handle).

# Advanced Audio Editing Terms

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- Scrubbing
  - Clicking and dragging the playhead of an audio project through the timeline to get to a particular section.
  - The user is able to hear the audio while scrubbing, making navigation of the project more efficient.

# Advanced Audio Editing Terms

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- Ducking
  - An editing feature that lowers the volume of a particular track when another audio source is present.
  - Commonly used for voiceovers with background music.
- Equalization
  - The process of adjusting the different levels (bass, treble, mid-tones, etc.) in an audio recording in order to produce the best sound.

# Advanced Audio Editing Terms

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- Audio Gain
  - Adding gain to audio will increase the level of the output signal using power from an amplifier; increases the voltage output of the signal.
- Normalization
  - The process of making sure all of the audio levels in a project are at a consistent level and sound good together.